POTENTIAL FOR INCREASING AGRICULTURAL WATER PRODUCTIVITY IN THE BLACK VOLTA BASIN, GHANA.

BY

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MSc. Thesis Funded By CPWF VI 'Targeting and Scaling Out'

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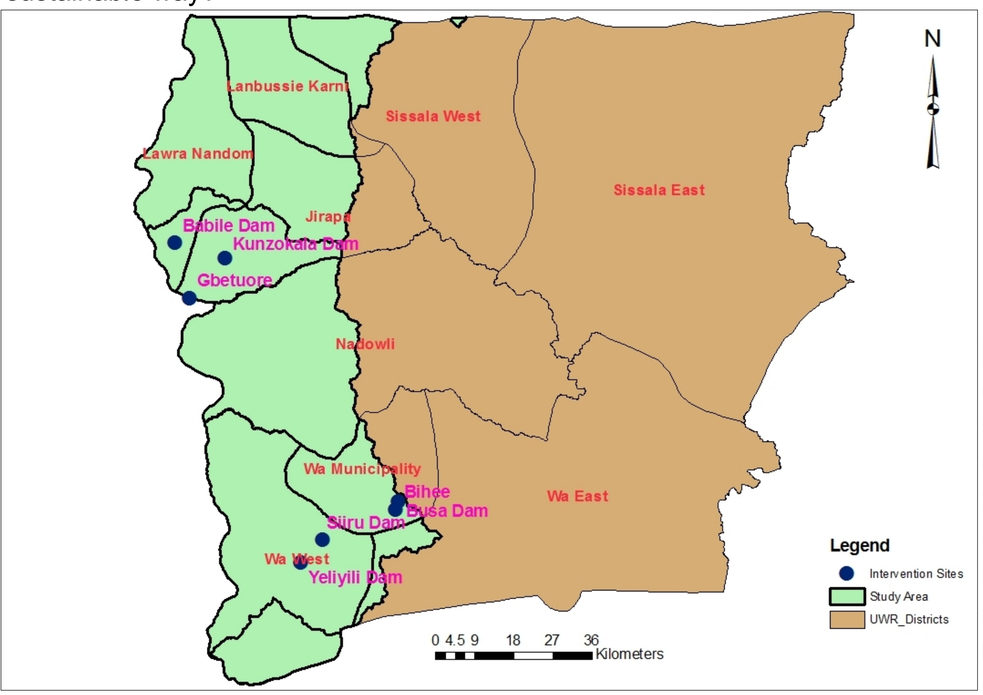
BACKGROUND

The Black Volta Basin provides a major water resource in Ghana and the Upper West region in particular. Agriculture is the main occupation of majority of the inhabitants, but this is normally done on subsistence basis.

The management of water for agricultural purposes under various agricultural water management interventions is key to the levels of productivity, be it physical or economic. Productivity is linked to yields which is greatly affected by either over irrigation or under irrigation.

RESEARCH QUESTIONS

- ❖ Thus the potential to increase agriculture water productivity exist in the current situation?
- ❖ Will increased dry season agriculture activities help reduce poverty?
- ❖ Is there an AWM intervention that has the potential to improve livelihood in a sustainable way?



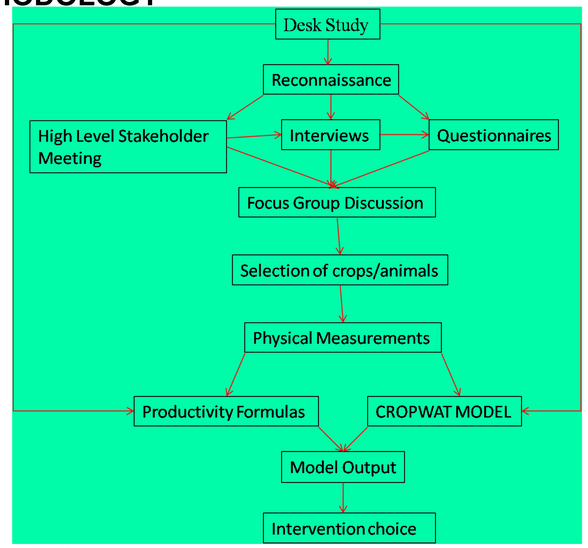
Black Volta Catchment in Upper West Region

NB:

This research work was conducted at the field (farm) scale and must be stated that the **"water losses"** realized here when looked at the sub-basin scale is beneficial by recharging ground water and raising water table for dry season irrigation.

DATA REQUIREMENT: Volume of water applied,
CROPWAT 8.0/CLIMWAT 2.0
Crop Water Consumption Factor
Physical Crop Water Productivity
Economic Water Productivity
Livestock Water Productivity
Agricultural Water Productivity

METHODOLOGY

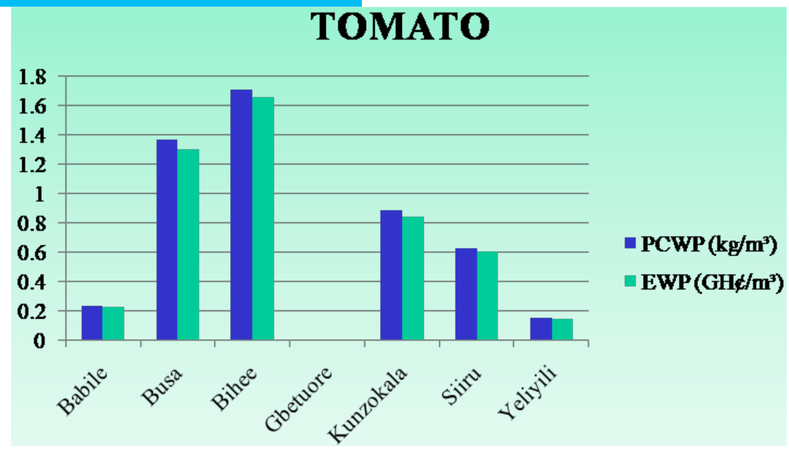


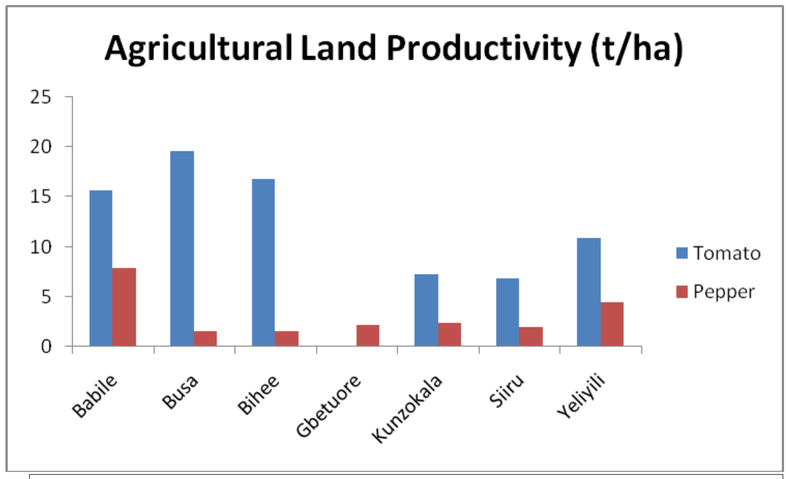
RESULTS

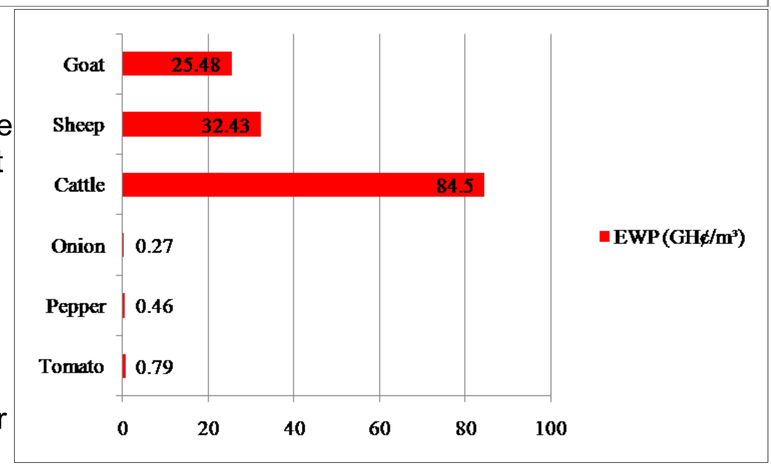
- ▪ Small Reservoir having main canal, laterals, furrow had CWCF of between 86.79% - 87.47%, hence over irrigation.
- ▪Shallow wells over irrigated vegetable by between 6.6% - 24.45%.
- ▪Water pumps with small reservoir or riverine was chosen due to its ability to enhance better agricultural water management and also promote off farm skills acquisition in the repairs and maintenance of the water pumps.
- ▪ Livestock had a better productivity although the animals were not engaged for any domestic or agricultural activity in the dry season.

Conclusion

From the work, the potential to increase the agricultural water productivity in the Black Volta basin, Ghana exits through good AWM interventions.







Acknowledgement

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